wireless RERC

Rehabilitation Engineering Research Center for
Wireless Technologies

VIA ECFS

May 23, 2007

Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
TW-A325
Washington D.C. 20554

Re: *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands (WT Docket No. 06-150); Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems (CC Docket No. 94-102); Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones (WT Docket No. 01-309); Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27 and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services (WT Docket No. 03-264); Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules (WT Docket No. 06-169); Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band (PS Docket No. 06-229); Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010 (WT Docket No. 96-86)*

Dear Ms. Dortch:

Enclosed for filing in the above referenced Report and Order and Further Notice of Proposed Rulemaking proceedings are comments of the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC).

Should you have any questions concerning this filing, please do not hesitate to contact me via phone (404-385-4640) or e-mail (helena.mitchell@cacp.gatech.edu).

Respectfully submitted,

Helena Mitchell
Principal Investigator
Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC)
Executive Director
Center for Advanced Communications Policy
Georgia Institute of Technology

Enclosure

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
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	)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229
	)	
Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010	)	WT Docket No. 96-86

COMMENTS OF
REHABILITATION ENGINEEERING RESEARCH CENTER FOR WIRELESS TECHNOLOGIES (WIRELESS RERC)

The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC), hereby submits comments to the Report and Order and Further Notice of Proposed Rulemaking in the above-referenced proceedings on April 27, 2007.

The Wireless RERC[1] is a research center focused on promoting equitable access to and use of wireless technologies by people with disabilities and on encouraging the application of Universal Design practices in future generations of wireless technologies.

This proceeding addresses many important public safety issues that are relevant to the concerns of people with disabilities. The Wireless RERC has chosen to address two specific items PS Docket No. 06-229 and WT Docket No. 96-86. These dockets are particularly relevant to achieving advanced communications for the protection of life, health and property while also promoting effective public safety communications applications that will benefit all citizens, including persons with disabilities.

The Wireless RERC has reviewed the Frontline Wireless LCC (Frontline) "Public Safety Broadband Deployment Plan" (Plan), and supports

[1] The Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC) is sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR) of the U.S. Department of Education under grant number H133E060061. The opinions contained in this paper are those of the authors and do not necessarily reflect those of the U.S. Department of Education or NIDRR.

the concept in general, but regrets that the important issues raised might be rushed for review without more careful engineering and public safety usage analysis. We believe it is important to allocate additional spectrum for shared use in a public/private partnership serving primary public safety communications needs, and commercial broadband services. Frontline proposes that the Commission alter the upper portion of the band plan and service rules in the *700 MHz Commercial Services Notice* in order to auction a single nationwide 10-megahertz license (a new "E Block") near the 700 MHz Public Safety spectrum that would be subject to specific conditions. The "E Block" would consist of the paired 757-762 MHz and 787-792 MHz frequencies, which currently comprise the upper half of the 20-megahertz D Block of the Upper 700 MHz Band. The new paired "E Block" licensee would construct and operate a common infrastructure to support a broadband public safety network as well as its own commercial broadband network.

700 MHz Public Safety Spectrum

Redesignate Public Safety Wideband Spectrum to Broadband Use Consistent with a Nationwide Interoperability Standard. (¶ 250)

The Wireless RERC believes that public safety is paramount. Emergency first responders must have compatible communications technologies to coordinate interagency response, facilitate incident

management, and deliver critical information to the public over a nationwide, broadband interoperable communications network. Presently, local public safety services[2], including fire, police and emergency medical services, hospitals, emergency rooms and trauma centers[3] lack an interoperable communications system that would integrate existing radio frequency infrastructures with an Internet Protocol (IP) backbone, and connect with Mobile Communications Units. Local public safety agencies have received grants from the Federal Government to upgrade radio communications equipment. However, the upgraded equipment requires a technical interface to connect with advanced IP communications networks. Consequently, agency operational effectiveness is still compromised. Additionally, local public safety agencies independently acquiring upgraded radio communications equipment are not necessarily consulting with State and regional public safety agencies to ensure that their equipment will be interoperable. Autonomy with regard to public safety communications poses

[2] Section 337(f)(1) defines the term "public safety services" to mean services "the sole or principal purpose of which is to protect the safety of life, health, or property" and that are provided by "State or local government entities" and "nongovernmental organizations that are authorized by a governmental entity" whose primary mission is the provision of services, the sole or principal purpose of which is to protect the safety of life, health, or property. 47 U.S.C. § 337(f)(1)(A), (B).

[3] Emergency medical personnel are not always integrated into a localities' public safety communications planning. Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission,* available at http://www.fcc.gove/eb/hkip/karrp.pdf at 36.

the obvious problem of hindering cross-jurisdictional coordination and dynamic information sharing during large scale disasters.[4]

State governments are now addressing deficiencies in public safety communications needs by reassessing their respective State Strategic Plans, and updating statewide interoperable plans in accordance with the Department of Homeland Security guidelines. The State Strategic Plans underpin the development of a national communications infrastructure system that facilitates and supports the timely exchange of information and coordination among participating emergency response entities over an interoperable, broadband nationwide network. In earlier FCC Emergency Alert System (EAS) proceedings[5] regarding the role of state and local emergency communications plans[6] EAS officials recognized the need for creating sound emergency communications plans and pointed out that having proper plans ensured emergency personnel were better equipped during an emergency in how best to ensure safety of life and property.[7] In that proceeding the Wireless RERC noted that by ensuring that plans included knowledge on how best to assist individuals with disabilities during

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[4] Peha, Jon M. (October 2006). *From TV to Public Safety, The Need for Fundamental Reform in Public Safety Spectrum and Communications Policy* (p. 3). New American Foundation, Wireless Future Program

[5] *In the Matter of Review of the Emergency Alert System* EB Docket No. 04-296 (Released November 10, 2005). See comments of the Wireless RERC filed January 23, 2006.

[6] *In the Matter of Review of the Emergency Alert System* EB Docket No. 04-296 (Released August 12, 2004). See comments of the Wireless RERC filed October 29, 2004.

[7] See FCC website, Enforcement Bureau, EAS Rules and Regulations, and SECC and LECC 1990's EBS chair meetings.

emergency evacuations an understanding of the accessibility concerns of people with disabilities would contribute to reduced lose of life.[8] We believe this concept is applicable to State Strategic Plans as proper plans ensure emergency personnel are better equipped to follow the official steps during an emergency, including knowledge of what agencies and personnel to contact, detailed activation and operation plans and how best to ensure safety of life and property.

Mandatory plans, along with periodic training and testing, would help ensure that officials are better prepared during emergencies. The Wireless RERC urges that plans include knowledge on how best to assist individuals with disabilities during emergency evacuations whether in the workplace, institutions, housing developments or other locations. There should further be mandatory education of public safety and emergency personnel to ensure there is an understanding of the accessibility concerns of people with disabilities. Periodic updates at least every other year should be required, as officers change, stations are bought and sold, technologies are converged, and emerging technologies are adopted. Persons with disabilities should be included in plan development and testing including direct participation in exercise scenarios.

[8] See Wireless RERC comments at page 6.

Frontline Proposal

Frontline proposes that the "E Block" licensee be required to provide open access to its network, allowing the attachment of any device to its network. (¶275)

Comprehensive communications interoperability systems that facilitate coordinated interagency response for emergencies and day-to-day operations have been designed, developed and deployed recently in pilot projects. These systems can provide scalable solutions that encompass radio networks, IP and non-IP networks, telephones, cell phones, and personal computers. They capitalize on existing communications networks and devices, and provide gateways that enable migration to IP networks and services. The Frontline Plan envisions an "open" network standard that will give public safety access to a variety of suppliers of advanced communications equipment and systems that will interconnect with the broadband interoperable network.

Frontline also proposes that the "E Block" licensee be required to provide open access to its network, allowing the attachment of any device to the network and permitting users to access services and content provided by unaffiliated parties. The Wireless RERC recommends that serious

consideration must be given to the security of an open access wireless network. While the advent of open systems interfaces has assisted the acceptance and deployment of networking technology, it has also seen a downside in that it has become easier to intrude on networks designed with such open features. Enhanced information systems require additional protections to ensure the security, reliability and integrity of the network.[9] Default encryption built into open access networks may reduce significant security risks.

Frontline Network Sharing Agreement

Network Sharing Agreement (¶¶ 281-283)

The Wireless RERC is concerned with the details of the interoperable network being specified in a Network Sharing Agreement (NSA) negotiated by the "E Block" licensee and National Public Safety licensee. Frontline proposes in its Service Rules that the "E Block" licensee "enter into good faith negotiations with the national public safety licensee" regarding the NSA, and as part of that obligation, would require that the "E Block" licensee consult with the Public Safety licensee on the design, construction, and operation of the shared network…." The Wireless RERC submits that "good faith" is a vague, malleable phrase subject to negotiation between public and private

[9] National Institute of Standards and Technology, http://csrc.nist.gov/publications/nistpubs/800-11/node24.html.

sector parties in disparate bargaining positions about a novel, technologically complex shared network arrangement that is ultimately meant to benefit the overall public interest. To avoid confusion in the interpretation and application of the "good faith" provision and to ensure priority access to public safety broadband operations during times of emergency, the adoption of Commission rules would be preferable. The downside of this recommendation is the lengthy process of a Commission rulemaking proceeding and its impact on the spectrum auction deadline. Further, the executed NSA will contain commercial and network proprietary information subject to non-disclosure provisions which will restrict review by public parties. Under these circumstances, the Commission should retain oversight of the NSA to ensure compliance with any future service rules.

The Wireless RERC supports the Commission in requiring the parties to the NSA to agree to binding arbitration as the dispute resolution process. Most telecommunications agreements contain language identifying the forum in which disputes will be resolved, primarily arbitration.[10] Arbitration is a consensual process whereby parties agree to submit a dispute to a neutral third party arbitrator or panel of arbitrators for resolution. The commitment to arbitrate would arise at the outset of drafting of the NSA by the inclusion of arbitration clauses in the agreement that will bind the parties to seek

[10] *Arbitration: A Double Edged Sword*, http://www.phoneplusmag.com/articles/521feat04.html at p. 1.

arbitration for future disputes. An advantage of arbitration is that it is a private procedure that better ensures the privacy and secrecy, protecting against disclosure of a party's confidential information. Arbitration also can provide a faster method of resolving disputes.[11] The disadvantage of arbitration is the potential concerns about the enforceability of the arbitration proceedings and about initiatives of the regulator to protect the integrity of its own jurisdiction at the expense of the credibility of the arbitration process. An additional concern is the legitimacy of a private dispute resolution process as a venue for resolution of issues affecting public policy and government interests.[12] It is noted that the failure to resolve disputes quickly can cause delays in the introduction of new services and infrastructure, block or reduce investment in the telecommunications sector, and impede its development.[13]

The Wireless RERC seeks the further expansion of broadband wireless technologically advanced applications to people with disabilities. Several important elements should be integrated into the development of an inclusive nationwide broadband public safety communications network, including increasing communications capacity. These elements encompass the design and implementation of appropriate user interfaces; a robust range of devices

[11] *Dispute Resolution/ICT Regulation Toolkit,* http://www.ictregulationtoolkit.org/en/Section.2069.html, at p. 5.
[12] *Id.* at pp. 6-7.
[13] *Id.* at p. 1.

capable of receiving public safety communications; and the capability of wireless carriers to deliver critical information via cell broadcasting and SMS messaging on digital wireless devices. The Commission should ensure that new and evolving IP-based wireless public safety communication applications are able to serve all critical populations including people with disabilities.

The Wireless RERC agrees that it is important to implement public/private shared use of reallocated spectrum in the 700 MHz band. Public safety has a high demand for spectrum use during mission-critical conditions and underutilized spectrum might be one way to alleviate congestion if concerns with interoperability, robustness, and security issues are resolved. Frontline proposes that the "E Block" licensee be required to operate as a wholesale provider with respect to commercial use of the "E Block" spectrum. This requirement would allow the E Block licensee to use this spectrum to offer new commercial broadband services to the public.

The Wireless RERC suggests the shared use could promote optimal spectrum efficiency of the upper 700 MHz band and provide public safety organizations the authority to negotiate the delivery of critical information by commercial carriers to wireless customers. Specifically, the Wireless RERC suggests that any reallocation of spectrum address the needs of people with disabilities and that future opportunities for universal design in

product/services be included as part of the early planning or mandated service in exchange for commercial use of the spectrum.

In closing, the Wireless RERC wishes to emphasize that a decision by the FCC to allocate spectrum for public safety use take into account the specific concerns and accessibility requirements of people with disabilities.[14] It is important to recall that the proposed nationwide broadband interoperable public safety network was initially conceived to benefit the overall public interest.

Respectfully submitted,

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Dated this 23rd day of May 2007

[14] Executive Order: Individuals with Disabilities in Emergency Preparedness, rel'd. July 22, 2004. The Executive Order authorizes the Federal Government to facilitate cooperation among Federal, State, local and tribal governments, private organizations and individuals in the implementation of emergency preparedness plans as they related to individuals with disabilities.